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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,916	04/01/2005	Yoshiro Chikaki	KKH-0037	5280

7590 01/09/2007
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Suite 501
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EXAMINER

CHIMIAK, EMILY ANN

ART UNIT	PAPER NUMBER
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1733

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/529,916

Applicant(s)

CHIKAKI ET AL.

Examiner

Emily Chimiak

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 01 Apr 2005.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to Claim 1, It is unclear how many diaphragms are in the apparatus. Lines 5-6 can refer to one diaphragm between an upper and lower chamber or two diaphragms, one in the upper chamber and one in the lower chamber. The term "a diaphragm" on line 7 can refer to any of the aforementioned diaphragms or it can refer to an additional diaphragm. In line 10 it is unclear which of these diaphragms are meant by "said diaphragm." Furthermore, it is unclear what is mounted on the heater board (the diaphragm or the object to be laminated). For the purpose of examination, it is assumed that one diaphragm separates the upper and lower chamber (based on Figure 5) and that the object to be laminated is mounted on the heater board (based on Figure 5).

Claims 2-5 are dependent on Claim 1 and thus do not avoid the rejection.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chikaki et al. (US 6149757) in view of Panagrossi et al. (US 24856).

As to Claim 1, Chikaki et al. discloses an upper and under (lower) chamber divided with a diaphragm made of heat resistance rubber that expands downward during compression, i.e. a diaphragm capable of freely expanding for pressurizing the object to be laminated mounted on said heater board, (col. 2 lines 26-39, col. 4 lines 28-30 and col. 5 line 60).

Chikaki et al. does not mention butyl rubber as the diaphragm material. It is noted that fluorine contained rubber (col. 4 lines 28-31) is only exemplary.

However, Panagrossi et al. discloses a flexible diaphragm comprised of butyl rubber made for use in high and low temperature applications (col. 3 lines 37-40 and lines 67-70 and col. 4 lines 13-14 and line 49).

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It would have been obvious at the time of invention to use a diaphragm comprised of butyl rubber as taught by Panagrossi et al. in the laminating apparatus of Chikaki et al. because that composition is flexible in high and low temperatures.

As to Claims 3 and 4, in col. 2 lines 35-57, Chikaki et al. discloses a supporting means that can be put in a position apart from the heating stage, i.e. holding means for holding the object to be laminated mounted on said heater board in a state that the object to be laminated is separated upward from an upper surface of said heater board while the object to be laminated is carried in (Claim 3) or carried out (Claim 4).

As to Claim 5, it is noted that the laminating apparatus of Chikaki et al. is capable of laminating a solar battery panel. It is further noted that the particular object to be laminated does not constitute a limitation in an apparatus claim see (MPEP 2115).

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chikaki et al. (US 6149757) as modified by Panagrossi et al. in Claim 1, and in further view of Custer et al. (3857775).

As to Claim 2, Chikaki et al. as modified by Panagrossi et al. in Claim 1 does not disclose a composition of butyl rubber comprising 100 to 0 parts by weight of halogenated butyl, 0 to 100 parts by weight of regular butyl, 1 to 5 parts by weight of magnesium oxide, 5 to 100 parts by weight of carbon black, 0 to 20 parts by weight of paraffin oil, 1 to 5 parts by weight of zinc oxide, 1 to 20 parts by weight of resin vulcanizing agent, and 0 to 10 parts by weight of processing aid. It is noted that the

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compositions comprising butyl rubber are not limited to the examples provided by Panagrossi et al.

However, Custer et al. teaches a diaphragm for an electrolytic cell comprising butyl as a substitute to neoprene that remains flexible over a longer period of time at temperatures up to 365°C (col. 2 lines 7-8 and lines 34-37 col. 9 lines 1-30 and col. 10 lines 7-15). It is noted that Custer et al. discloses a higher useable temperature (365°F) than that disclosed by Panagrossi et al. (310°F) for the exemplary butyl compositions.

It would have been obvious at the time of invention to use the heat resistant properties of a butyl rubber composition as taught by Custer et al. to form the diaphragm of Chikaki et al. in order to allow the diaphragm to function at temperatures above 310°F over a long time without becoming hard and brittle.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Chimiak whose telephone number is (571)272-6486. The examiner can normally be reached on Monday-Friday 8:30-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571)272-6486. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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